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## SEARCH REQUEST FORM

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Requester's Full Name: K. Weddington Examiner #: 68082 Date: 9-3-02  
Art Unit: 1614 Phone Number 308-4650 Serial Number: 101030-886  
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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): Riccardo Losca

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

A composition comprising

1) ~~car~~ carvacrol

2) thymol

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	Type of Search	Vendors and cost where applicable
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Searcher Phone #: <u>308-4499</u>	AA Sequence (#) _____	Dialog _____
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Date Completed: <u>9/5/02</u>	Litigation _____	Lexis/Nexis _____
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FILE COVERS 1907 - 5 Sep 2002 VOL 137 ISS 10  
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L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON CARVACROL/CN  
L7 1 SEA FILE=REGISTRY ABB=ON PLU=ON THYMOL/CN  
L15 74 SEA FILE=HCAPLUS ABB=ON PLU=ON L6(L)L7  
L16 271 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 (L) COMPOSITION  
L17 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 AND L15

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L17 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1986:596968 HCAPLUS  
DOCUMENT NUMBER: 105:196968  
TITLE: The volatile oils of some endemic Thymus species growing in southern Anatolia  
AUTHOR(S): Mericli, Filiz Ilisulu; Tanker, Mekin  
CORPORATE SOURCE: Fac. Pharm., Istanbul Univ., Istanbul, 34452, Turk.  
SOURCE: Planta Med. (1986), (4), 340  
CODEN: PLMEAA; ISSN: 0032-0943  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The volatile oil contents and the **compn.** of the oils from 4 Thymus species, *T. cilicicus*, *T. revolutus*, *T. sipyleus*, and *T. zygioides* grown in Turkey were investigated. Only *T. zygioides* contained thymol [89-83-8] in considerable quantities (24.62%). The *T. cilicicus* oil was rich in .alpha.-terpineol [98-55-5] (33.4%) and camphor [76-22-2] (8.3%), *T. revolutus* oil in .alpha.-terpineol (30.46%) and *T. sipyleus* oil in geranial [141-27-5] (32.11%). The latter oil contained no thymol nor carvacrol [499-75-2].

L17 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1986:502324 HCAPLUS

DOCUMENT NUMBER: 105:102324  
TITLE: Study of essential oils of two species of Moroccan  
origanums (*Origanum compactum* Benth. and *Origanum  
elongatum* Emb. et Maire)  
AUTHOR(S): Benjilali, B.; Richard, H. M. J.; Barिताux, O.  
CORPORATE SOURCE: Sect. Technol. Aliment. Nutr. Hum., Inst. Agron. Vet.  
Hassan II, Rabat, Morocco  
SOURCE: Lebensm.-Wiss. Technol. (1986), 19(1), 22-6  
CODEN: LBWTAP; ISSN: 0460-1173  
DOCUMENT TYPE: Journal  
LANGUAGE: French  
AB Essential oils of *O. compactum* and *O. elongatum* grown in Morocco were  
steam distd. and then analyzed by gas chromatog.-mass spectrometry.  
Thirty-two compds., representing 90 to 98% of the total oil, were  
identified from 10 samples collected on wild planting of different geog.  
origins. Seven of them, .gamma.-terpinene [99-85-4], terpinen-4-ol  
[562-74-3], .alpha.-terpineol [98-55-5], p-cymene [99-87-6],  
carvacrylmethyl ether [6379-73-3], thymol [89-83-8] and  
carvacrol [499-75-2], represent 82 to 93% of the total oil and  
explain the important variations obsd. in the **compn.** between  
wild plantings.

L17 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:502321 HCAPLUS  
DOCUMENT NUMBER: 105:102321  
TITLE: Chemical composition and variation of the essential  
oil from the Norwegian *Thymus praecox* ssp. *arcticus*  
and *Thymus pulegioides*  
AUTHOR(S): Stahl, Elisabeth  
CORPORATE SOURCE: Dep. Pharmacog., Univ. Hamburg, Hamburg, D-2000/13,  
Fed. Rep. Ger.  
SOURCE: Prog. Essent. Oil Res., Proc. Int. Symp. Essent. Oils,  
16th (1986), Meeting Date 1985, 157-61. Editor(s):  
Brunke, Ernst-Joachim. de Gruyter: Berlin, Fed. Rep.  
Ger.  
CODEN: 55BIAR  
DOCUMENT TYPE: Conference  
LANGUAGE: English  
AB Linalyl acetate [115-95-7] was the main component of oils from 52 *T.  
praecox* ssp. *arcticus* plants. Six chemotypes were characterized by a  
different **compn.** of sesquiterpene alc. fraction; 5 were  
identical with an Iceland type but another one contg. T-cadinol  
[5937-11-1] was widespread in Norway. Of a no. of samples of *T.  
pulegioides* oils, 2 different chemotypes were found: carvacrol [499-75-2]  
and thymol [89-83-8]. Metabolites of the  
terpene phenol biochem. pathway comprised 75% of the oil.

L17 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:230240 HCAPLUS  
DOCUMENT NUMBER: 104:230240  
TITLE: The essential oil of oil *Origanum majorana* raised on  
saline alkali soils  
AUTHOR(S): Khanna, R. K.; Sharma, O. S.; Raina, R. M.; Sinha, S.;  
Singh, A.  
CORPORATE SOURCE: Natl. Bot. Res. Inst., Lucknow, India  
SOURCE: Indian Perfum. (1985), 29(3-4), 171-5  
CODEN: IPERAS; ISSN: 0019-607X  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB *O. majorana* Oils (1.9% dry wt.) were obtained from plants raised on pH  
9.0-10.5 saline alkali soils. The oils **compn.** was studied and  
.alpha.-terpinene [99-86-5] 18.15, p-cymene [99-87-6] 2.45, geraniol  
[106-24-1] 7.59, linalool [78-70-6] 13.23, .alpha.-terpineol [98-55-5]

0.25, carvacrol [499-75-2] 30.12 and thymol [89-83-8]  
] 1.60% were identified.

L17 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:10348 HCAPLUS  
DOCUMENT NUMBER: 104:10348  
TITLE: Composition of the essential oil of *Origanum majorana*  
grown in different localities in Turkey  
AUTHOR(S): Sarer, E.; Scheffer, J. J. C.; Janssen, A. M.;  
Svendsen, A. Baerheim  
CORPORATE SOURCE: Fac. Pharm., Ankara Univ., Ankara, Turk.  
SOURCE: Essent. Oils Aromat. Plants, Proc. Int. Symp., 15th  
(1985), Meeting Date 1984, 209-12. Editor(s):  
Baerheim-Svendsen, A.; Scheffer, J. J. C.  
Nijhoff/Junk: Dordrecht, Neth.  
CODEN: 54LGAU  
DOCUMENT TYPE: Conference  
LANGUAGE: English

AB **Compn.** of *O. majorana* grown in different localities in Turkey  
differed in the content of main components, carvacrol [499-75-2]  
] and thymol [89-83-8] (48-74% and 0.5-4%, resp.,). The oils  
were also tested against bacteria, yeast, and some fungi, and a remarkable  
effect against fungi was obsd.

L17 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2002 ACS

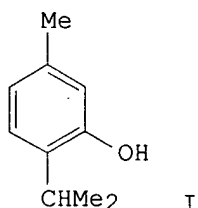
ACCESSION NUMBER: 1983:59729 HCAPLUS  
DOCUMENT NUMBER: 98:59729  
TITLE: Chemical composition and biological activity of  
essential oils of plants from Northeast Brazil - genus  
*Lippia*  
AUTHOR(S): Bezerra, P.; Fernandes, A. G.; Craveiro, A. A.;  
Andrade, C. H. S.; Matos, F. J. A.; Alencar, J. W.;  
Machado, M. I. L.; Viana, G. S. B.; Matos, F. Fatima;  
Rouquayrol, M. Zelia  
CORPORATE SOURCE: Dep. Biol., Univ. Fed. Ceara, Brazil  
SOURCE: Cienc. Cult. (Sao Paulo) (1981), 33(Supl., Simp.  
Plant. Med. Bras., 6th, 1980), 1-14  
CODEN: CCUPAD; ISSN: 0009-6725  
DOCUMENT TYPE: Journal  
LANGUAGE: Portuguese

AB The **compn.** of *Lippia alnifolia*, *L. gratta*, *L. sidoides*, *L.*  
*thymoides*, *L. alba*, *L. aff. sideoide*, and *L. aff. aristata* essential oils is  
given. thymol [89-83-8] Was the major constituent of *L.*  
*alnifolia*, .beta.-caryophyllene [87-44-5] of *L. aristata*, and  
*O*-methylthymol [1076-56-8] of *L. thymoides*. Most codistillates from oil  
manuf. were molluscicidal against *Biomphalaria glabrata*. Of the  
components, molluscicidal activity was shown by thymol, carvacrol [499-75-2], and limonene [138-86-3]. The codistillates had some  
physiol. affects on mammals in vitro, such as acetylcholinesterase  
blockage in the rat uterus.

L17 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:145161 HCAPLUS  
DOCUMENT NUMBER: 94:145161  
TITLE: Chemical examination of essential oil of *Coleus*  
*aromaticus* Benth  
AUTHOR(S): Baslas, R. K.; Kumar, Pradeep  
CORPORATE SOURCE: Dep. Chem., Gov. Raza P. G. Coll., Rampur, 244 901,  
India  
SOURCE: J. Indian Chem. Soc. (1981), 58(1), 103-4  
CODEN: JICSAH; ISSN: 0019-4522  
DOCUMENT TYPE: Journal  
LANGUAGE: English

GI



AB Phys. characteristics and chem. **compn.** of the essential oil of *C. aromaticus* are described. Thymol (I) [89-83-8] (41.30), carvacrol [499-75-2] (13.25), 1,8-cineole [470-82-6] (5.45), eugenol [97-53-0] (4.40), and .beta.-caryophyllene [87-44-5] (4.20%) were the major terpenes, and terpinolene [586-62-9], .alpha.- [80-56-8] and .beta.-pinene [127-91-3], Me eugenol [93-15-2], and .beta.-phellandrene [555-10-2] were <4%.

L17 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1978:78948 HCAPLUS  
 DOCUMENT NUMBER: 88:78948  
 TITLE: The essential oil of *Eucalyptus rostrata* (E. camaldulensis)  
 AUTHOR(S): Acosta de Iglesias, Dora I.; Lalli de Viana, Marta E.; Retamar, Juan A.  
 CORPORATE SOURCE: Fac. Bioquim., Quim. Farm., Univ. Nac. Tucuman, Tucuman, Argent.  
 SOURCE: Riv. Ital. Essenze, Profumi, Piante Off., Aromi, Saponi, Cosmet., Aerosol (1977), 59(10), 538-40  
 CODEN: RIPOAM  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Spanish

AB The **compn.** of the essential oil fraction of *E. rostrata* was .alpha.-pinene [80-56-8] 3.75, .beta.-pinene [127-91-3] 2.51, .alpha.-phellandrene [99-83-2] 1.82, eucalyptol [470-82-6] 18.50, p-cymene [99-87-6] 31.20, linalyl acetate [115-95-7] 4.50, neryl acetate [141-12-8] 6.30, phellandral [21391-98-0] 5.69, cuminal [122-03-2] 8.54, piperitone [89-81-6] 6.03, .alpha.-terpineol [98-55-5] 0.91, nerol [106-25-2] 5.70, fatty acids 0.40, and phenols p-cresol, [106-44-5] carvacrol [499-75-2], thymol [89-83-8], eugenol [97-53-0] and o-cresol [95-48-7] 0.96%. The yield of the essential oil fraction was 0.37%; the fraction was obtained mainly from leaves, but with some fruits and flowers.

L17 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1977:428847 HCAPLUS  
 DOCUMENT NUMBER: 87:28847  
 TITLE: Studies on the essential oils of the Pakistani species of the family Umbelliferae. Part I. *Trachyspermum ammi* (L) Sprague (ajowan) seed oil  
 AUTHOR(S): Ashraf, Muhammad; Bhatti, Muhammad Khurshid  
 CORPORATE SOURCE: PCSIR Lab., Lahore, Pak.  
 SOURCE: Pak. J. Sci. Ind. Res. (1975), 18(5), 232-5  
 CODEN: PSIRAA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Fresh large and small seeds of *T. ammi* yielded 3.2-3.5 and 5.0-5.2% resp.,

of essential oils. The resp. chem. **compns.** of these 2 types of seeds, as detd. by gas chromatog., were .alpha.-pinene [80-56-8] 0.33, 0.63; camphene [79-92-5] 0.63, 0.56; .beta.-pinene [127-91-3] 1.24, 1.56; .DELTA.3-carene [13466-78-9] 0.42, 0.80; limonene [138-86-3] 0.25, 2.25; .gamma.-terpinene [99-85-4] 20.35, 18.70; p-cymene [99-87-6] 23.78, 20.80; and phenols 53.0, 54.70%. The phenols, as detd. by column chromatog., were thymol [89-83-8] 45.20 and 48.40 and carvacrol [499-75-2] 6.80 and 4.50% in the large and small seeds, resp. The yield and **compn.** of the oil varied according to the locality of cultivation and storage time of the seeds.

L17 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:568307 HCAPLUS  
DOCUMENT NUMBER: 83:168307  
TITLE: Composition of wild thyme oil  
AUTHOR(S): Razdan, Tey K.; Koul, G. L.  
CORPORATE SOURCE: Dep. Appl. Chem., Reg. Eng. Coll., Srinagar, India  
SOURCE: Riechst., Aromen, Koerperpflegem. (1975), 25(6), 166, 168  
CODEN: RAKPAC  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB Wild thyme oil from *Thymus serpyllum* from Kasmir contains 4 phenolic and 11 nonphenolic terpenoids, including carvacrol [499-75-2], p-cymene [99-87-6], zingiberene [495-60-3], thymol [89-83-8], and .gamma.-terpinene [99-85-4] as the major components. The **compn.** of wild thyme oil from Kashmir is entirely different from that of oils from other sources.

L17 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:520640 HCAPLUS  
DOCUMENT NUMBER: 83:120640  
TITLE: Chemical composition of essential oil of *Helichrysum stoechas* var .alpha.-syncladum  
AUTHOR(S): Proenca da Cunha, A.; Cardoso do Vale, J.  
CORPORATE SOURCE: Lab. Farmacogn., Fac. Farm. Coimbra, Coimbra, Port.  
SOURCE: Bol. Fac. Farm., Univ. Coimbra, Ed. Cient. (1974), 34, 1-21  
CODEN: BFCEB3  
DOCUMENT TYPE: Journal  
LANGUAGE: Portuguese

AB Anal. of the essential oil from *H. stoechas syncladum* by gas chromatog. showed the following **compn.**: carvacrol [499-75-2] (6.25%), diosphenol [490-03-9] (3.80%), thymol [89-83-8] (0.78%), d-.alpha.-pinene [7785-70-8] (5.90%), camphene [79-92-5] (6.85%), .beta.-pinene [127-91-3] (1.70%), d-limonene [5989-27-5] (3.12%), p-cymene [99-87-6] (1.05%), .alpha.-pinene epoxide [1686-14-2] (4.60%), limonene epoxide [1195-92-2] (1.50%), verbenone [80-57-9] (1.75%), pinocampheol [25465-95-6] (4.82%), and verbenol [473-67-6] (0.05%).

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 L2 427 SEA FILE=REGISTRY ABB=ON PLU=ON THYMOL?  
 L3 3545 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR ?CARVACR?  
 L4 15654 SEA FILE=HCAPLUS ABB=ON PLU=ON L2 OR THYMOL?  
 L5 1076 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 (L)L4  
 L18 47 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND BACTER?  
 L19 44 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 NOT (2002 OR 20020)/PY  
 L20 44 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND ?BACTER?

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L20 ANSWER 1 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2002:316016 HCAPLUS  
 TITLE: Combined effect of nisin, **carvacrol** and **thymol** on the viability of *Bacillus cereus* heat-treated vegetative cells  
 AUTHOR(S): Periago, P. M.; Palop, A.; Fernandez, P. S.  
 CORPORATE SOURCE: Universidad Politecnica de Cartagena, Escuela Tecnica Superior de Ingenieria Agronomica, Dpto. Ingenieria de Alimentos y del Equipamiento Agricola, Paseo Alfonso XIII 48, Murcia, 30203, Spain  
 SOURCE: Food Science and Technology International (London, United Kingdom) (2001), 7(6), 487-492  
 CODEN: FSTIFZ; ISSN: 1082-0132  
 PUBLISHER: Sage Publications Ltd.  
 DOCUMENT TYPE: Journal

LANGUAGE: English

AB The influence of mild heat pretreatment on the **bactericidal** action of nisin, **carvacrol** and **thymol** on stationary and exponential phase cells of two *Bacillus cereus* strains was studied. **Carvacrol** or **thymol** concns. of 0.3 mmol/L had no **bactericidal** effect on unheated, and a minor effect on heated *B. cereus* cells either in stationary or exponential growth phases. Nisin (0.15  $\mu$ g/mL) alone decreased the viable counts in all cases (unheated and heated cells in stationary and exponential phase) although the two strains tested showed different sensitivity to this natural antimicrobial between them. When **carvacrol** or **thymol** were combined with nisin, it resulted in a greater loss of viability of heated cells than when nisin was applied alone. There was a synergistic effect of nisin and both essential oils with a mild heat pretreatment on the viability of *B. cereus* cells. This study pointed out the potential use of nisin alone and in combination with **carvacrol** or **thymol** applied after a mild heat pretreatment for preservation of minimally processed foods.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:300951 HCAPLUS

DOCUMENT NUMBER: 137:145164

TITLE: Use of GC, GC/MS techniques for investigation of essential oil from wild and garden species of thyme

AUTHOR(S): Hethelyi, Eva B.; Stoeva, Tatjana; Bernath, Jeno

CORPORATE SOURCE: Kerteszettudományi Kar, Gyogy- és Aromanövények Tanszék, Szent István Egyetem, Budapest, 1118, Hung.

SOURCE: Olaj, Szappan, Kozmetika (2001), 50(6), 239-248  
CODEN: OSZKAT; ISSN: 0472-8602

PUBLISHER: METE

DOCUMENT TYPE: Journal

LANGUAGE: Hungarian

AB The chem. compn. of essential oil from the flowering sprout of both garden thyme and wild thyme, native in Hungary, has been analyzed by means of GC, GC/MS methods. Their  $\alpha$ - and  $\beta$ -pinene, p-cymene, 1,8-cineol, linalool, borneol, **thymol** and **carvacrol** components have been identified. The main component in both varieties is the **thymol** (22.8-35.5%). The chem. characteristics of the essential oil of three feral species, native in Bulgaria, have been studied. The 73 value in the redox p.d. of the garden thyme herb shows significant antioxidant activity, and the 35% quantity of the phenolic **thymol** clearly refers to this free radical scavenger activity. The oil of thyme hindered in 100% the proliferation of gram-pos. **bacteria** even in the presence of blood. Significantly hindered also the gram-neg. **bacteria** (the *Pseudomonas* strains only moderately) and the proliferation of the thread- and pollutant molds. The resistance activity of **bacteria**, virus and molds is well known. Such behavior of **bacteria** never has been found by the authors in case of essential oils.

L20 ANSWER 3 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:18734 HCAPLUS

DOCUMENT NUMBER: 136:267231

TITLE: Effect of **carvacrol** and **thymol** on odor emissions from livestock wastes

AUTHOR(S): Varel, V. H.; Miller, D. N.

CORPORATE SOURCE: Agricultural Research Service, US Meat Animal Research Center, US Department of Agriculture, Clay Center, NE, 68933, USA

SOURCE: Water Science and Technology (2001), 44(9), 143-148  
CODEN: WSTED4; ISSN: 0273-1223



PUBLISHER: IWA Publishing  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A majority of the beef cattle and swine in the United States is produced in confined facilities. This generates significant environmental pollutants from the waste produced, including global warming gases, odor, and pathogens. The objectives of this study were to control the fermn. activity and pathogens in cattle and swine wastes with antimicrobial plant essential oils. Anaerobic one liter flasks with a working vol. of 0.5 L were used to evaluate the effect of **carvacrol** and **thymol** on prodn. of fermn. gas, short-chain volatile fatty acids, lactate, and **bacterial** populations. In cattle waste, 1 g L<sup>-1</sup> each of **carvacrol** and **thymol** completely inhibited the prodn. of volatile fatty acids and lactate over 23 days. In swine waste, 2.5 g L<sup>-1</sup> **carvacrol** inhibited the prodn. of all volatile fatty acids. We conclude that these essential oils are effective in controlling livestock waste odor emissions and field studies are warranted.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 4 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:910717 HCAPLUS  
DOCUMENT NUMBER: 136:205147  
TITLE: Chemical composition and antimicrobial properties of essential oils of Thymus x-porlock and Zataria multiflora  
AUTHOR(S): Rasooli, Iraj  
CORPORATE SOURCE: Dep. Biol., Coll. Basic Sci., Shahed Univ., Tehran, Iran  
SOURCE: Life and Medical Sciences Online [online computer file] (2000), 1, No pp. given  
CODEN: LMSOAX  
URL: <http://www.itrust.de/lamso/lpext.dll/Infobase0/titel00006.htm?fn=docu>  
PUBLISHER: Ludewig Verlagsgesellschaft mbH  
DOCUMENT TYPE: Journal; (online computer file)  
LANGUAGE: English

AB Antimicrobial effects of essential oils extd. by steam distn. from Zataria multiflora and Thymus x-porlock, on E. coli and S. aureus were studied. Disc diffusion method was conducted to evaluate the zone of microbial growth inhibition at various concns. of the essential oils. The antimicrobial effect was also studied against three different concns. of microbial suspension to find out MIC (Minimal Inhibitory Conc.) and MBC (Minimal **Bactericidal** Conc.). The essential oils from the above plants were strongly **bactericidal** with that of Zataria multiflora being highly effective. Chem. compns. of the essential oils were analyzed by Gas Chromatog. and Mass Spectrometry (GC and GC/MS). Eleven common chem. compds. i.e. more than 50 % of the total chem. compn., were found at various concns. in both the oils, out of which nine were monoterpenes. Major components of essential oil of Zataria multiflora were **Carvacrol** (37 %), Ortho cymene (15 %) and Dodecane (9 %), and those of Thymus x-porlock were 1,8-Cineole (54.52 %), Sabinene hydrate (5.03 %) and **thymol** (7.89 %). With a view to the increasing limitations of the use of chem. antimicrobial agents and development of drug resistance, it seems necessary to switch onto the new harmless antimicrobial agents from natural sources.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:666874 HCAPLUS  
DOCUMENT NUMBER: 135:200404  
TITLE: Antimicrobial phytotherapeutics derived from Lippia

INVENTOR(S): sidoides Cham.  
Craveiro, Afranio Aragao; Machado, Maria Iracema  
Lacerda; Matos, Francisco Jose de Abreu; Wilson de  
Alencar, Jose  
PATENT ASSIGNEE(S): Brazil  
SOURCE: Braz. Pedido PI, 4 pp.  
CODEN: BPXXDX  
DOCUMENT TYPE: Patent  
LANGUAGE: Portuguese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 9805100	A	20000530	BR 1998-5100	19981109

AB Pharmaceuticals derived from the trunk, inflorescences, leaves, and small branches of *Lippia sidoides* Cham. are disclosed which can be used as fungicides, **bactericides**, and general antimicrobial agents. The phytotherapeutics can be used as infusions, mouthwashes, teas, dyes, aq. exts., EtOH exts, or as the essential oil of the plant. The active agents in the prepn. include **carvacrol**, **thymol**, and other components which synergize these phenolic compds.

L20 ANSWER 6 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:170045 HCAPLUS  
DOCUMENT NUMBER: 134:256272  
TITLE: Plant-derived oils reduce pathogens and gaseous emissions from stored cattle waste  
AUTHOR(S): Varel, Vincent H.; Miller, Daniel N.  
CORPORATE SOURCE: Roman L. Hruska U.S. Meat Animal Research Center, Agricultural Research Service, USDA, Clay Center, NE, 68933, USA  
SOURCE: Applied and Environmental Microbiology (2001), 67(3), 1366-1370  
CODEN: AEMIDF; ISSN: 0099-2240  
PUBLISHER: American Society for Microbiology  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB **Carvacrol** and **thymol** in combination at 6.7 mM each completely inhibited the prodn. of short-chain volatile fatty acids and lactate from cattle waste in anoxic flasks over 23 days. Fecal coliforms were reduced from 4.6 .times. 10<sup>6</sup> to 2.0 .times. 10<sup>3</sup> cells per mL 2 days after treatment and were nondetectable within 4 days. Total anaerobic **bacteria** were reduced from 8.4 .times. 10<sup>10</sup> to 1.5 .times. 10<sup>7</sup> cells per mL after 2 days and continued to be suppressed to that level after 14 days. If the concn. of **carvacrol** or **thymol** were doubled (13.3 mM), either could be used to obtain the same inhibitory fermn. effect. We conclude that **carvacrol** or **thymol** may be useful as an antimicrobial chem. to control pathogens and odor in stored livestock waste.  
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 7 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2000:547146 HCAPLUS  
DOCUMENT NUMBER: 134:61324  
TITLE: Composition and in vitro antimicrobial activity of the essential oil of *Thymus herba-barona* Loisel growing wild in Sardinia  
AUTHOR(S): Juliano, Claudia; Mattana, Antonella; Usai, Marianna  
CORPORATE SOURCE: Dipartimento di Scienze del Farmaco, Universita degli Studi di Sassari, Sassari, 07100, Italy  
SOURCE: Journal of Essential Oil Research (2000), 12(4),

516-522

CODEN: JEOREG; ISSN: 1041-2905

PUBLISHER: Allured Publishing Corp.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two samples of the essential oils from *Thymus herba-barona* Loisel (Labiatae) of Sardinian origin were chem. characterized and their antimicrobial activity evaluated, in comparison with *T. vulgaris* and *T. serpyllum* oils, on the basis of their min. inhibitory concns. (M.I.C.s) and of the contact times required to totally inhibit development of microorganisms. GC and GC/MS anal. showed that the main components of essential oils of *T. herba-barona* were **carvacrol** (75.4% and 73.0%), borneol (3.6% and 6.4%) and p-cymene (3.9% and 3.3%), while the percentage of **thymol** was very low (1.0% and 0.7%). Results of the antimicrobial investigation demonstrated that both oils possessed similar and relevant microbicidal activities, esp. against Gram+ **bacteria** (M.I.C.s range 0.125-0.500 mg/mL) and mycetes (M.I.C.s 0.125-0.500 mg/mL). At inhibitory concns., times required to kill microbial inocula (5-10 min) are comparable with those of chlorhexidine gluconate, an antiseptic with a broad range of antimicrobial activities. The strong activity of *T. herba-barona* oils is very probably due to the presence of **carvacrol**, which was found from our screenings to exhibit a similar antimicrobial activity. Our findings provide for a rationale basis of a possible utilization of this oil in fields requiring safe and cheap compds. with antiseptic and preservative properties, such as cosmetic, pharmaceutical and food industries.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 8 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:194746 HCAPLUS

DOCUMENT NUMBER: 132:290941

TITLE: Antimicrobial effect of *Satureja cuneifolia* Ten.  
Essential oil

AUTHOR(S): Bezic, Nada; Skocibusic, Mirjana; Dunkic, Valerija  
CORPORATE SOURCE: Faculty of Natural Science and Education, University  
of Split, Split, 21000, Croatia

SOURCE: Acta Botanica Croatica (1999), 58, 99-104

CODEN: ABCRA2; ISSN: 0365-0588

PUBLISHER: Bioloski Odjel Prirodoslovno-Matematickog Fakulteta Sv  
eucilista u Zagrebu

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The essential oil compn. of *Satureja cuneifolia* Ten., was analyzed with respect to samples picked in different vegetative stages in the region of Rotimlje (Stolac, Herzegovina). We did not find oil of a compn. characteristic of the *Satureja* genus. The researched species mostly did not contain either **Thymol** or **Carvacrol**. The antimicrobial effect of the oil was highly marked during the post - flowering period, esp. for the *Staphylococcus aureus* **bacterium**. Essential oil fungicidal activity was best marked on *Candida albicans* yeast during the flowering period. Picking this plant at the proper time can considerably increase its therapeutic effect.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 9 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:653892 HCAPLUS

DOCUMENT NUMBER: 132:33087

TITLE: In-vitro antimicrobial activity and chemical  
composition of Sardinian *Thymus* essential oils

AUTHOR(S): Cosentino, S.; Tuberoso, C. I. G.; Pisano, B.; Satta,  
M.; Mascia, V.; Arzedi, E.; Palmas, F.

CORPORATE SOURCE: Department of Experimental Biology, University of  
Cagliari, Sardinia, Italy  
SOURCE: Letters in Applied Microbiology (1999), 29(2), 130-135  
CODEN: LAMIE7; ISSN: 0266-8254  
PUBLISHER: Blackwell Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Essential oils and their components are becoming increasingly popular as naturally occurring antimicrobial agents. In this work the chem. compn. and the antimicrobial properties of Thymus essential oils and of their main components were detd. Three essential oils obtained from different species of Thymus growing wild in Sardinia and a com. sample of Thymus capitatus oil were analyzed. The essential oil components were identified by GC/MS anal. The antimicrobial activity of the oils and components was detd. against a panel of std. ref. strains and multiple strains of food-derived spoilage and pathogenic **bacteria**, using a broth microdilution method. The GC/MS anal. showed that the major constituents of the oils were monoterpene hydrocarbons and phenolic monoterpenes, but the concn. of these compds. varied greatly among the oils examd. The results of the antimicrobial assay showed that essential oils extd. from Sardinian Thymus species have an antimicrobial activity comparable to the one obsd. in other thyme oils. It seems also confirmed that the antimicrobial properties of thyme essential oils are mainly related to their high phenolic content. Among the single compds. tested **carvacrol** and **thymol** were the most efficient against both ref. strains and food-derived **bacteria**. The results of this study confirmed the possibility of using thyme essential oils or some of their components in food systems to prevent the growth of foodborne **bacteria** and extend the shelf-life of processed foods.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 10 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:741852 HCAPLUS  
DOCUMENT NUMBER: 130:122048  
TITLE: **Antibacterial** activity of some essential oils

AUTHOR(S): Roengsumran, Sophon; Petsom, Amorn; Thaniyavarn, Suthep; Pornpakakul, Surachai; Khantahiran, Suntree  
CORPORATE SOURCE: Chemistry Department, Faculty of Science, Chulalongkorn University, Bangkok, 10330, Thailand  
SOURCE: Journal of Scientific Research of Chulalongkorn University (1997), 22(1), 13-19  
CODEN: JSREEM; ISSN: 0125-6335  
PUBLISHER: Chulalongkorn University, Faculty of Science  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The **antibacterial** activity of essential oils from 31 medicinal plants was tested against Staphylococcus aureus, Streptococcus pyogenes, Bacillus subtilis, Escherichia coli, Salmonella typhi and Pseudomonas aeruginosa. Cinnamon oil could inhibit all six of the **bacterial** strains with min. inhibition concn. (MIC) values of 312-2500 mg/L. Oregano oil and summer thyme oil could inhibit all strains except P. aeruginosa, with MIC values of 625-5000 mg/L. The GC/MS anal. of these essential oils indicated that cinnamaldehyde was the main component of cinnamon oil, while **carvacrol** and **thymol** were the main components of oregano oil and summer thyme oil, resp. The MIC values of cinnamaldehyde and **thymol** were 156-1250 mg/L and 156-2500 mg/L, resp.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 11 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:501594 HCAPLUS  
 DOCUMENT NUMBER: 129:214008  
 TITLE: Characterization of the action of selected essential oil components on Gram-negative **bacteria**  
 AUTHOR(S): Helander, Ilkka M.; Alakomi, Hanna-Leena; Latva-Kala, Kyoesti; Mattila-Sandholm, Tiina; Pol, Irene; Smid, Eddy J.; Gorris, Leon G. M.; von Wright, Atte  
 CORPORATE SOURCE: VTT Biotechnology and Food Research, FIN-02044, Finland  
 SOURCE: Journal of Agricultural and Food Chemistry (1998), 46(9), 3590-3595  
 CODEN: JAFCAU; ISSN: 0021-8561  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB **Carvacrol**, (+)-carvone, **thymol**, and trans-cinnamaldehyde were tested for their inhibitory activity against *Escherichia coli* O157:H7 and *Salmonella typhimurium*. In addn., their toxicity to **Photobacterium leiognathi** was detd., utilizing a bioluminescence assay. Their effects on the cell surface were investigated by measuring the uptake of 1-N-phenyl-naphthylamine (NPN), by measuring their sensitization of **bacterial** suspensions toward detergents and lysozyme, and by analyzing material released from cells upon treatment by these agents. **Carvacrol**, **thymol**, and trans-cinnamaldehyde inhibited *E. coli* and *S. typhimurium* at 1-3 mM, whereas (+)-carvone was less inhibitory. Trans-Cinnamaldehyde was the most inhibitory component toward *P. leiognathi*. **Carvacrol** and **thymol** disintegrated the outer membrane and released outer membrane-assocd. material from the cells to the external medium; such release by (+)-carvone or trans-cinnamaldehyde was negligible. Of the tested components, **carvacrol** and **thymol** decreased the intracellular ATP pool of *E. coli* and also increased extracellular ATP, indicating disruptive action on the cytoplasmic membrane.

L20 ANSWER 12 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:256293 HCAPLUS  
 DOCUMENT NUMBER: 129:24488  
 TITLE: Industrial microbicides having specific combination of active ingredients  
 INVENTOR(S): Miyano, Nobuo; Mizuno, Kazuhiro; Koguma, Akira  
 PATENT ASSIGNEE(S): Taishoo Tekunosu K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10109906	A2	19980428	JP 1996-295596	19961003

AB The microbicides contain .gtoreq.1 selected from p-hydroxybenzoate esters, dehydroacetic acid, its salts, sorbic acid, its salts, 2-(4-thiazolyl)benzimidazole, imazalil, o-phenylphenol, its salts, polylysine, chitosan, essential oils such as *Artemisia capillaris* exts., **thymol**, **carvacrol**, etc. and optional .gtoreq.1 org. acids such as selected from benzoic acid, fumaric acid, itaconic acid, adipic acid, propionic acid, etc. and its salts, ZnCl<sub>2</sub>, Ba metaborate, and hydroxides of metals such as Zn, Ca, etc., as active ingredients. The microbicides show broad spectrum and high UV- and heat-stability, and are useful for various industrial products including building materials, for preventing quality deterioration and maintaining appearance. A polypropylene plate contg. Na dehydroacetate and itaconic acid showed

**antibacterial** activity against *Escherichia coli* and *Staphylococcus aureus*.

L20 ANSWER 13 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:130252 HCAPLUS

DOCUMENT NUMBER: 128:202929

TITLE: Research for the development of natural antimicrobial materials. I. -antimicrobial activity and effective constituents in *Mosla chinensis* Maxim

AUTHOR(S): Furuya, Tsutomu; Matsuura, Youichi; Mizobata, Satoshi; Takahara, Sumio; Takahashi, Kazuhisa

CORPORATE SOURCE: Faculty of Science, Okayama University of Science, Japan

SOURCE: Nippon Shokuhin Kagaku Gakkaishi (1997), 4(2), 114-119  
CODEN: NSKGF4; ISSN: 1341-2094

PUBLISHER: Nippon Shokuhin Kagaku Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB In order to screen for natural antimicrobial compds., we carried out halo tests filter paper disks against ten species of microorganisms at 500mg/mL of exts. obtained from about two hundred plants. Although most exts. were effective against **bacteria**, the methanol ext. of *Mosla chinensis* Maxim. (Hosoba-yamajiso in Japanese. Labiatae) proved highly inhibitory against not only **bacteria** but also yeast and fungi (Table 1). Partitioning between H<sub>2</sub>O and three successive solvents, hexane, CHCl<sub>3</sub> and EtOAc, and MIC\* testing against twenty-three species of microorganisms revealed the hexane fraction to exhibit the strongest antimicrobial activity. I.e., the MIC values with this fraction were found at the lowest concn. and comparison of the diam. of zone inhibition at the same concn., demonstrated the hexane fraction to exert the greatest effects against almost all species of microorganisms. Plants of Labiatae, esp. such as *Thymus*, *Origanum* and *Satureja* used as spices and food additives, contain essential oils, whose constituents such as **thymol**, **carvacrol** and eugenol are known to possess antimicrobial activity. A comparison of antimicrobial activities using the MIC test showed that the methanol ext. of *M. chinensis* was more inhibitory against all species of microorganisms than that of *Th. vulgaris*. In addn., **thymol** exhibited a wide spectrum of antimicrobial activities, similar to these for *M. chinensis* (Table 2). Hexane fractions from the leaves, stems flowers and roots of *M. Chinensis* collected during June to August, were analyzed by GLC in order to det. their volatile constituents, and **thymol** was detected in all fractions. The content of **thymol** in leaves, 4.43-13.03% was overwhelmingly higher than in other parts, and max. levels were obsd. in leaves collected in August (Table 3). Furthermore, antimicrobial activities of exts. detd. by MIC testing were proportional to the **thymol** content. In conclusion, constituents of the hexane fraction contg. essential oils, are the main factors responsible for antimicrobial activity of *M. chinensis*. The results further suggest the participation of **thymol** in inhibitory effects against microorganisms.

L20 ANSWER 14 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:277376 HCAPLUS

DOCUMENT NUMBER: 124:352427

TITLE: Chemical composition and antimicrobial activity of essential oil of *Thymus algeriensis* Boiss

AUTHOR(S): Aboutabl, E. A.; El-Dahmy, S. I.

CORPORATE SOURCE: Faculty Pharmacy, Cairo University, Cairo, 11562, Egypt

SOURCE: Bulletin of the Faculty of Pharmacy (Cairo University) (1995), 33(1), 87-90

CODEN: BFPHA8; ISSN: 1110-0931

PUBLISHER: Cairo University, Faculty of Pharmacy

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The essential oil prepd. by steam-distn. of the flowering aerial parts of *Thymus algeriensis* Boiss (Fam. Lamiaceae) growing wildly in Libya, was analyzed, for the first time, by capillary gas chromatog. coupled to mass spectrometry (CGC-MS). Individual components of the oil were identified by their retention times and mass spectra as well as comparison with published data or with ref. compds. Quant. detn. was carried out based on the peak area measurement. The study revealed that oxygenated compds. constitute 51.72% of the oil; being mainly the phenols: **carvacrol** (36.78%) and **thymol** (12.45%). Monoterpene hydrocarbons amounted to 48.2%, the main components being .beta.-myrcene (20.22%) and .alpha.-terpinene (10.66%). The oil exhibited significant antimicrobial activity against certain Gram pos. and Gram neg. **bacteria** as well as fungi.

L20 ANSWER 15 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:256406 HCAPLUS

DOCUMENT NUMBER: 124:284287

TITLE: Antimicrobial and cytotoxic activities of *Origanum* essential oils

AUTHOR(S): Sivropoulou, Afroditi; Papanikolaou, Eleni; Nikolaou, Constantina; Kokkini, Stella; Lanaras, Thomas; Arsenakis, Minas

CORPORATE SOURCE: School of Biology, Aristotle University, Thessaloniki, 54006, Greece

SOURCE: Journal of Agricultural and Food Chemistry (1996), 44(5), 1202-5

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three *Origanum* essential oils, *Origanum vulgare* ssp. *hirtum*, *Origanum dictamnus*, and a com. available *Origanum* oil, were analyzed by gas chromatog.-mass spectrometry (GC-MS) and showed a high content of **carvacrol**, **thymol**, .gamma.-terpinene, and p-cymene representing 73.7%, 92.8%, and 87.78% of the total oil, resp. The three essential oils exhibited high levels of antimicrobial activity against eight strains of Gram-pos. and Gram-neg. **bacteria**. Among the major components of the three oils, **carvacrol** and **thymol** exhibited the highest levels of antimicrobial activity, while their biosynthetic precursors .gamma.-terpinene and p-cymene were inactive. The essential oil of *O. vulgare* ssp. *hirtum* was extremely **bactericidal** at 1/4000 diln. and even at dilns. as high as 1/50000 caused considerable decrease in **bacterial** growth rates. The same essential oil also exhibited high levels of cytotoxicity against four permanent animal cell lines, including two derived from human cancers.

L20 ANSWER 16 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:430919 HCAPLUS

DOCUMENT NUMBER: 122:310774

TITLE: The chemical fate of the endogenous plant antioxidants **carvacrol** and **thymol** during oxidative stress

AUTHOR(S): Deighton, N.; Glidewell, S. M.; Goodman, B. A.; Deans, S. G.

CORPORATE SOURCE: Scottish Crop Research Institute, Dundee, DD2 5DA, UK

SOURCE: Proceedings of the Royal Society of Edinburgh, Section B: Biological Sciences (1994), Volume Date 1993, 102(Oxygen and Environmental Stress in Plants), 247-52  
CODEN: PRSSDP; ISSN: 0269-7270

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The major antioxidants present in the essential (volatile) oils of oregano (*Origanum vulgare*), summer savory (*Satureja hortensis*) and thyme (*Thymus vulgaris*) have been identified as **carvacrol** and **thymol** which have both been demonstrated to possess fungicidal and **bactericidal** properties. EPR spectra produced upon oxidn. are inconsistent with the expected phoxy free radicals, but resemble those of galvinoxyl and anthronyl radicals. The EPR spectrum, in the case of **carvacrol**, is a pair of quintets with isotropic splittings, 0.325 and 0.080 mT. ENDOR and TRIPLE resonance expts. were performed and are indicative of the paramagnetic species being a substituted anthronyl.

IT **89-83-8, Thymol 499-75-2, Carvacrol**

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(chem. fate of the endogenous plant antioxidants **carvacrol** and **thymol** during oxidative stress)

L20 ANSWER 17 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:425446 HCAPLUS

DOCUMENT NUMBER: 122:196663

TITLE: Individual and combined **antibacterial** activity of the main components of three thyme essential oils

AUTHOR(S): Lattaoui, N.; Tantaoui-Elaraki, A.

CORPORATE SOURCE: Departement de Microbiologie Alimentaire et Biotechnologie, Institut Agronomique et Veterinaire Hassan II, Rabat, Morocco

SOURCE: Rivista Italiana EPPOS (1994), 5(13), 13-19

CODEN: RIEPD7; ISSN: 0392-0445

PUBLISHER: Rivista Italiana EPPOS

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **antibacterial** activity of the main components (reaching or exceeding 5%) of *Thymus broussonetii*, *T. zygis* and *T. satureioides* oils was studied. **Thymol**, **carvacrol**, borneol, p-cymene, .alpha.-pinene and camphene were used sep. and in three mixts. contg. the same proportions of the six components as in the whole essences. **Thymol** turned out to be the most active, followed by **carvacrol**, borneol, p-cymene, .alpha.-pinene and camphene. The **antibacterial** activity of the mixts. prepd. was lower than the one exerted by the resp. whole essences, which revealed the significant role played by the minor compds. mainly in *T. zygis* oil.

L20 ANSWER 18 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:626219 HCAPLUS

DOCUMENT NUMBER: 121:226219

TITLE: Factors that interact with the **antibacterial** action of thyme essential oil and its active constituents

AUTHOR(S): Juven, B. J.; Kanner, J.; Schved, F.; Weisslowicz, H.

CORPORATE SOURCE: Volcani Centre, Institute Technology and Storage Agricultural Products, Bet Dagan, Israel

SOURCE: J. Appl. Bacteriol. (1994), 76(6), 626-31

CODEN: JABAA4; ISSN: 0021-8847

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The viable counts of *Salmonella typhimurium* on nutrient agar (NA) decreased upon the addn. of either the essential oil of thyme or its constituent **thymol**, esp. under anaerobic conditions. Antagonistic effects of **thymol** against *Staphylococcus aureus* were also greater under anaerobic conditions. In contrast to the phenolic constituents of the oil, **thymol** and **carvacrol**, the chem. related terpenes p-cymene and .gamma.-terpinene had no antagonistic effects against *Salm. typhimurium*. The addn. of Desferal to NA counteracted the **antibacterial** effects of both thyme oil and



**thymol**. No support was obtained, however, for a possible role of iron in the oxygen-related **antibacterial** action of the thyme oil and **thymol** or for the obsd. effect of Desferal. In the presence of **thymol**, the viable counts of *Salm. typhimurium* obtained on a minimal medium (MM) were lower than those obtained on NA. Addn. of bovine serum albumin (BSA) neutralized the **antibacterial** action of **thymol**. It is suggested that the effects of BSA or Desferal are due to their ability to bind phenolic compds. through their amino and hydroxylamine groups, resp., thus preventing complexation reactions between the oil phenolic constituents and **bacterial** membrane proteins. This hypothesis is supported by the marked decrease in the viable counts of *Salm. typhimurium* caused by either thyme oil or **thymol** when the pH of the medium was changed from 6.5 to 5.5 or the concn. of Tween 80 in the medium was reduced.

L20 ANSWER 19 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:529759 HCAPLUS

DOCUMENT NUMBER: 121:129759

TITLE: Activity of **thymol**, **carvacrol**, cinnamaldehyde and eugenol on oral **bacteria**

AUTHOR(S): Didry, Nicole; Dubreuil, Luc; Pinkas, Madeleine

CORPORATE SOURCE: Laboratoire de Matière médicale and, Lille, 59006, Fr.

SOURCE: Pharmaceutica Acta Helvetiae (1994), 69(1), 25-8

CODEN: PAHEAA; ISSN: 0031-6865

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The antimicrobial activity of **thymol**, **carvacrol**, cinnamaldehyde and eugenol alone or combined was tested by micromethods on eight oral **bacteria**. The compds. showed an inhibitory activity on seven microorganisms and a synergistic effect was obsd. with certain combinations. The four compds. can be used alone or combined, as eugenol and **thymol**, eugenol and **carvacrol**, **thymol** and **carvacrol**, during the treatment of oral infectious diseases.

IT 89-83-8, **Thymol**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(antimicrobial activity of, for oral **bacteria**, eugenol and **carvacrol** synergism with)

IT 89-83-8, **Thymol**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(antimicrobial activity of, for oral **bacteria**, eugenol and **carvacrol** synergism with)

L20 ANSWER 20 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:624623 HCAPLUS

DOCUMENT NUMBER: 119:224623

TITLE: Composition and antimicrobial activity of the essential oils of *Thymus broussonettii*, *T. zygis* and *T. satureioides*

AUTHOR(S): Tantaoui-Elaraki, Abdelrhafour; Lattaoui, Nezha;

Errifi, Aziza; Benjilali, Bachir

CORPORATE SOURCE: Dep. Microbiol. Aliment. Biotechnol., Inst. Agron.

Vet. Hassan II, Rabat, Morocco

SOURCE: J. Essent. Oil Res. (1993), 5(1), 45-53

CODEN: JEOREG; ISSN: 1041-2905

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The essential oils of *T. broussonettii*, *T. zygis*, and *T. satureioides*, which were produced from plants collected in Morocco, were analyzed by gas chromatog. The oil of *T. broussonettii* was rich in **carvacrol** (53.3%), p-cymene (13.5%), and .alpha.-pinene (8.6%). The abundant compds. in *T. zygis* oil were p-cymene (50.6%), **carvacrol** (8.1%),

borneol (5.8%), camphene (5.4%), .alpha.-pinene (5.2%), and **thymol** (5%), while the oil of *T. satureioides* contained borneol (31.2%), camphene (27.4%), .alpha.-pinene (17.5%), and linalool (6.3%) as major components. Examn. of the antimicrobial activity of the oils against 3 **bacteria**, 2 yeasts, and 2 molds revealed that the oil of *T. brousseonettii* was the most efficient in both killing the microorganisms and inhibiting their growth. The other 2 oils were much less active even though *T. zygis* oil possessed slightly more antimicrobial activity than *T. satureioides* oil. Among the **bacteria** examd. *Escherichia coli* was more resistant than *Staphylococcus aureus* and *Bacillus megaterium*, both in growth inhibition and destruction trials. *S. aureus* was more resistant than *B. megaterium* to the inhibitory effect, but more sensitive to the lethal activity of the oils. The 2 yeasts *Saccharomyces cerevisiae* and *Candida albicans* were identical in their sensitivity towards the 3 oils, while the mold *Zygorrhynchus* sp. was more sensitive than *Aspergillus niger* to growth inhibition and destruction. To growth inhibition, the molds were more sensitive than the yeasts and the **bacteria**, but *A. niger* was more difficult to destroy than the most resistant **bacterium** *E. coli*.

L20 ANSWER 21 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:400361 HCAPLUS  
DOCUMENT NUMBER: 119:361  
TITLE: Antimicrobial activity of **thymol**,  
**carvacrol** and cinnamaldehyde alone or in  
combination

AUTHOR(S): Didry, N.; Dubreuil, L.; Pinkas, M.  
CORPORATE SOURCE: Lab. Pharmacogn., Fac. Sci. Pharm. Biol., Lille, Fr.  
SOURCE: Pharmazie (1993), 48(4), 301-4  
CODEN: PHARAT; ISSN: 0031-7144

DOCUMENT TYPE: Journal  
LANGUAGE: French

AB The antimicrobial activity of **thymol**, **carvacrol**, and cinnamaldehyde was tested by several in vitro methods on **bacteria** involved in upper respiratory tract infections. The broad spectrum activity and synergistic effects obsd. with some combinations (specially **thymol** and **carvacrol**) could allow the use of the 3 compds. alone or combined for the treatment of respiratory infections.

L20 ANSWER 22 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:131854 HCAPLUS  
DOCUMENT NUMBER: 118:131854  
TITLE: Determination of essential oil and phenolic compounds  
in plants of the genera *Thymus* and *Satureja*

AUTHOR(S): Pekic, Branislav; Lepojevic, Zika; Zekovic, Zoran;  
Pekic, Lidija  
CORPORATE SOURCE: Tehnol. Fak., Novi Sad, Yugoslavia  
SOURCE: Zb. Rad. - Tehnol. Fak. Novom Sadu (1991), 22, 87-92  
CODEN: NSUZA4; ISSN: 0550-2187

DOCUMENT TYPE: Journal  
LANGUAGE: Serbo-Croatian

AB The contents of essential oil and phenolic compds. were detd. in the genera *Thymus* and *Satureja*, namely: *T. vulgaris* (1st and 2nd cut), *T. serpyllum*, *S. horvatii* and *S. hortensis*. *S. horvatii* had the highest content of essential oil (2.95 mL/100 g). The highest content in *T. vulgaris* was in 2nd cut (1.62 mL/100 g), while in the 1st cut it was 1.26 mL/100 g. The **thymol** content in *T. vulgaris* was higher in the 1st (60.86%) than in 2nd (42.31%) cut, which was not the case with **carvacrol**. In comparison with thyme, the essential oil of *T. serpyllum* had a low content of **thymol** (3.43%) and much higher of **carvacrol** (18.05%). In respect of the contents of **thymol** and **carvacrol** *S. horvatii* was similar to thyme, whereas the essential oil from *S. hortensis* had the highest content of

**carvacrol** (40.02%), and it contained only traces of **thymol**. In view of the relatively high contents of **thymol** and **carvacrol** in the essential oil of *Thymus* and *Satureja*, and taking into account the fungicidal and **bactericidal** action of these compds., their use in the pharmaceutical industry is justified.

L20 ANSWER 23 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1991:466794 HCAPLUS  
 DOCUMENT NUMBER: 115:66794  
 TITLE: Agrochemical microbicides comprising aromatic alcohols and phenols  
 INVENTOR(S): Beilfuss, Wolfgang; Diehl, Karl H.; Eggensperger, Heinz  
 PATENT ASSIGNEE(S): Sterling Drug, Inc., USA  
 SOURCE: Can. Pat. Appl., 17 pp.  
 CODEN: CPXXEB  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2012288	AA	19900916	CA 1990-2012288	19900315
PRIORITY APPLN. INFO.:			DE 1989-3908527	19890316

AB Environmentally-friendly, biodegradable agrochem. microbicides comprise a natural phenol (**thymol**, eugenol, **carvacrol**, etc.), an arom. alc. (benzyl alc., phenoxyethanol, cinnamic alc., etc.), wetting agents, surfactants, and customary additives. A mixt. of 2-phenoxyethanol 75, **thymol** 20 and Marlon A-350 5 parts, used at 3% concn., controlled *Pseudomonas aeruginosa*, *Botrytis cinerea* and other microorganisms, in the lab.

L20 ANSWER 24 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1989:420767 HCAPLUS  
 DOCUMENT NUMBER: 111:20767  
 TITLE: **Antibacterial** activity of summer savory (*Satureja hortensis* L) essential oil and its constituents  
 AUTHOR(S): Deans, S. G.; Svoboda, Katerina P.  
 CORPORATE SOURCE: Hortic. Food Stud., West Scotland Coll. Agric., Auchincruive/Ayrshire, KA6 5HW, UK  
 SOURCE: J. Hortic. Sci. (1989), 64(2), 205-10  
 CODEN: JHSCA8; ISSN: 0022-1589  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The essential oil distd. from summer savory (*S. hortensis*) consists of >400 different components. Ten **bacterial** genera, including some of public health significance, were tested against a no. of the predominant constituents in the oil, along with oils from different geog. locations (France, Hungary and Spain). Whole oils distd. from plants grown at different periods of the Scottish season were also tested against 5 of the test organisms. The constituents of summer savory essential oil which were most inhibitory to **bacterial** growth were: **carvacrol**, 1,8-cineole, eugenol, .beta.-humulene, linalool, .beta.-pinene, .alpha.-terpineol and **thymol**.

L20 ANSWER 25 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1989:6548 HCAPLUS  
 DOCUMENT NUMBER: 110:6548  
 TITLE: Effect of some essential oil components on the growth of food-borne **bacteria** and synergism with some food ingredients

AUTHOR(S): Kivanc, Merih; Akgul, Attila  
 CORPORATE SOURCE: Fac. Agric., Ataturk Univ., Erzurum, 25170, Turk.  
 SOURCE: Flavour Fragrance J. (1988), 3(2), 95-8  
 CODEN: FFJOED; ISSN: 0882-5734

DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Eight essential oil components added to growth media at concns. ranging from 50 to 400 ppm were studied with respect to their inhibitory effects against 10 common food-borne **bacteria** at 2 inoculum levels. The growth of the **bacteria** in culture media contg. 50 ppm **carvacrol** or 100 ppm cuminaldehyde with 2.0% NaCl, 0.05% ascorbic acid, or 0.5% sucrose in various combinations was also detd. Of essential oil components tested, **carvacrol**, **thymol**, and cuminaldehyde were inhibitory at some concns., except against *Pseudomonas aeruginosa*. The inoculum level had little effect on the inhibition. Pair combinations were not effective on any **bacteria**. **Carvacrol** or cuminaldehyde, when used in combination with NaCl and ascorbic acid, exhibited an enhanced inhibitory effect on certain **bacteria**. Thus, some combinations completely inhibited the growth of *P. aeruginosa*. *Bacillus cereus* also showed some sensitivity to these combinations.

L20 ANSWER 26 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:427637 HCAPLUS  
 DOCUMENT NUMBER: 109:27637  
 TITLE: Dental material for fighting cavities and periodontal disease  
 INVENTOR(S): Michl, Rudolf J.  
 PATENT ASSIGNEE(S): Etablissement Dentaire Ivoclar, Liechtenstein  
 SOURCE: Ger. Offen., 4 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3634697	A1	19880421	DE 1986-3634697	19861011
EP 264660	A2	19880427	EP 1987-114086	19870926
EP 264660	A3	19890405		
EP 264660	B1	19920617		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 77229	E	19920715	AT 1987-114086	19870926
CA 1332812	A1	19941101	CA 1987-548019	19870928
AU 8779557	A1	19880414	AU 1987-79557	19871012
AU 602012	B2	19900927		
US 5213615	A	19930525	US 1989-317578	19890301
PRIORITY APPLN. INFO.:			DE 1986-3634697	19861011
			EP 1987-114086	19870926
			US 1987-106215	19871009

AB A dental material for fighting cavities and periodontal disease consists of a combination of **thymol** and/or **carvacrol** and chlorhexidine and/or their pharmaceutically acceptable salts in a dental material carrier. These materials are useful as tooth lacquers or as dental cements of similar materials which have a long residence time in the oral cavity. Kolophonium (3 g) was mixed with 96% EtOH, the mixt. shaken for 24 h in a closed flask, 2 mL H<sub>2</sub>O added with **thymol** 0.1, chlorhexidine 0.02, and NaF 0.01 g. The mixt. was shaken, and the obtained lacquer stored at room temp. Cariotic cattle teeth were prepd. by storing healthy teeth for 14 days at 37.degree. in soln. contg. 6 wt.% CM-cellulose (pH 4.5). After removal, the teeth were washed and dried. When the lacquer was applied to these cariotic cattle teeth as well as to

healthy cattle teeth, and the knoop hardness (500 g load) of the dentin measured, the healthy tooth dentin hardness did not differ significantly from the hardness values obtained by testing uncoated healthy teeth, whereas the dentin hardness of the cariotic teeth was markedly increased by lacquer treatment.

L20 ANSWER 27 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:566987 HCAPLUS  
DOCUMENT NUMBER: 105:166987  
TITLE: Action of terpenoids on energy metabolism  
AUTHOR(S): Knobloch, K.; Weigand, H.; Weis, N.; Schwarm, H. M.; Vigenschow, H.  
CORPORATE SOURCE: Inst. Bot. Pharm. Biol., Univ. Erlangen-Nuernberg, Erlangen, D-8520, Fed. Rep. Ger.  
SOURCE: Prog. Essent. Oil Res., Proc. Int. Symp. Essent. Oils, 16th (1986), Meeting Date 1985, 429-45. Editor(s): Brunke, Ernst-Joachim. de Gruyter: Berlin, Fed. Rep. Ger.  
CODEN: 55BIAR  
DOCUMENT TYPE: Conference  
LANGUAGE: English

AB Twenty-five terpenoids (essential oils) were shown to inhibit respiration and phosphorylation by dark-grown *Rhodopseudomonas sphaeroides* membrane preps. and intact cells. The terpenoids [final concn. 5 mM (0.1%)] penetrated the cell wall and dissolved within the membrane. In general, no significant difference was obsd. in the inhibitor rates of whale cells or membrane preps. The most potent inhibitors were **thymol**, **carvacrol**, and other alc. terpenoids; monoterpene hydrocarbons were the least inhibitory. These data confirm the **bactericidal** action of terpenoids; applications in food preservation and dietary limits are discussed.

L20 ANSWER 28 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:10348 HCAPLUS  
DOCUMENT NUMBER: 104:10348  
TITLE: Composition of the essential oil of *Origanum majorana* grown in different localities in Turkey  
AUTHOR(S): Sarer, E.; Scheffer, J. J. C.; Janssen, A. M.; Svendsen, A. Baerheim  
CORPORATE SOURCE: Fac. Pharm., Ankara Univ., Ankara, Turk.  
SOURCE: Essent. Oils Aromat. Plants, Proc. Int. Symp., 15th (1985), Meeting Date 1984, 209-12. Editor(s): Baerheim-Svendsen, A.; Scheffer, J. J. C. Nijhoff/Junk: Dordrecht, Neth.  
CODEN: 54LGAU  
DOCUMENT TYPE: Conference  
LANGUAGE: English

AB Compn. of *O. majorana* grown in different localities in Turkey differed in the content of main components, **carvacrol** [499-75-2] and **thymol** [89-83-8] (48-74% and 0.5-4%, resp.,). The oils were also tested against **bacteria**, yeast, and some fungi, and a remarkable effect against fungi was obsd.

L20 ANSWER 29 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1978:69679 HCAPLUS  
DOCUMENT NUMBER: 88:69679  
TITLE: Study of the essential oil of *Thymus kotschyianus* and its antimicrobial activity  
AUTHOR(S): Nasirov, I. R.; Kasumov, F. Yu.; Ibragimov, G. G.  
CORPORATE SOURCE: Inst. Bot., Baku, USSR  
SOURCE: Azerb. Med. Zh. (1977), 54(9), 24-9  
CODEN: AZMZA6  
DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The essential oil fraction comprised 0.81-1.25% of the above-ground portion of *T. kotschyanus* plants. The essential oil fraction of the leaves and flowers was 2.07% of the abs. dry wt. in the massive flowering stage, 1.02% in the budding stage, and 0.66% in the fruit-bearing stage, suggesting that the flowering stage is the optimal time for prepn. of the essential oil stock. **Thymol**, **carvacrol**, borneol, cineol, linalool, and limonene were the major components of the essential oil. In a 1:1000 concn. the *T. kotschyanus* essential oil showed strong **bactericidal** and fungicidal activity against 11 common pathogenic microbes, suggesting the possible use of the essential oil in the prepn. of antiseptics and disinfectants.

L20 ANSWER 30 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1977:481244 HCAPLUS

DOCUMENT NUMBER: 87:81244

TITLE: Biochemical study of the essential oils of trans-Caucasian thyme and development of its useful properties

AUTHOR(S): Kasumov, F. Yu.; Ismailov, N. M.

CORPORATE SOURCE: USSR

SOURCE: Izv. Akad. Nauk Az. SSR, Ser. Biol. Nauk (1976), (6), 26-31

CODEN: IABLAQ

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The essential oil content of transcaucasian thyme (*Thymus trancausicus*) was 0.24-0.7% (on a dry matter basis of the aerial plant parts). Max. essential oil contents of leaves and inflorescences were obsd. during full flowering (0.8%). The essential oil was sepd. by preparative gas-liq. chromatog. into **thymol** (29.3), cineole (29.4), borneol (13.3), **carvacrol** (8), limonene (6.4), geraniol (5.3), geranyl acetate (2.9), linolool (1.6%), and 5 unidentified compds. The essential oil had **bactericidal** and fungicidal properties against a no. of harmful **bacteria** and fungi. The thyme essential oils may be used in the manuf. of some soaps and deodorants.

L20 ANSWER 31 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1977:84201 HCAPLUS

DOCUMENT NUMBER: 86:84201

TITLE: Microbiological properties of essential oils of *Thymus vulgaris* Linnaeus chemotypes

AUTHOR(S): Simeon de Bouchberg, M.; Allegrini, J.; Bessiere, C.;

Attisso, M.; Passet, J.; Granger, R.; Boillot, A.

CORPORATE SOURCE: Lab. Chim. Org. Pharm., Fac. Pharm., Montpellier, Fr.

SOURCE: Riv. Ital. Essenze, Profumi, Piante Off., Aromi,

Saponi, Cosmet., Aerosol (1976), 58(10), 527-36

CODEN: RIPOAM

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Six chemotypes of *T. vulgaris* are described which are characterized by the major constituent (>80%) of their essential oil: geraniol [106-24-1], linalol [78-70-6], .alpha.-terpineol [98-55-5], thujan-4-ol [17699-16-0], **carvacrol** [499-75-2], or **thymol** [89-83-8]. The 6 essential oils showed approx. the same antimicrobial activity against the **bacteria** and fungi tested with the exception of *Pseudomonas* which showed only very weak sensitivity. The **thymol** oil was the most active, followed by **carvacrol** and geraniol. Linalol showed activity similar to that of geraniol. The remaining 3 oils were much less active.

L20 ANSWER 32 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1970:528140 HCAPLUS

DOCUMENT NUMBER: 73:128140  
 TITLE: Relation between chemical constitution and antimicrobial activity. 24. Microbiostatic properties of phenols and related compounds against pathogenic **bacteria** and fungi as well as against microbes in x-ray film production materials

AUTHOR(S): Weuffen, Wolfgang; Richter, Lothar  
 CORPORATE SOURCE: Inst. Med. Mikrobiol. Epidemiol., Ernst-Moritz-Arndt-Univ. Greifswald, Greifswald, Ger.  
 SOURCE: Pharmazie (1970), 25(8), 480-4  
 CODEN: PHARAT

DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB Seventy-three phenols were synthesized and tested for activity against pathogenic **bacteria** and fungi, and the most active compds. were hexachlorophene, 2,4,5-trichlorophenol, 4-tert-butylphenol, pentachlorophenol, Ovitrol, and Preventol. These substances also had good activity against **bacteria** in x-ray film production materials. Me, halogen, and nitro substitution increased microbiostatic activity, while amino and hydroxyl groups, when compared to unsubstituted phenols, decreased activity. Substitution with strong hydrophilic agents, such as sulfonic acid, gave a product with no activity.

IT 6074-31-3  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (bactericidal activity of)

L20 ANSWER 33 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1960:65391 HCAPLUS  
 DOCUMENT NUMBER: 54:65391  
 ORIGINAL REFERENCE NO.: 54:12589c-i,12590c  
 TITLE: Azo derivatives of 4,4'-diaminodiphenyl sulfone. I. Products of azo coupling of tetrazotized 4,4'-diaminodiphenyl sulfone with phenols and naphthylamines

AUTHOR(S): Zhedek, M. S.  
 SOURCE: Zhur. Priklad. Khim. (1960), 33, 499-502  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB cf. CA 46, 8327g; 47, 867i, 1393g.-4,4'-Diaminodiphenyl sulfone (2.48 g.), m. 176-7.degree. (EtOH + C), synthesized by the method of Zasov (CA 42, 534a), dissolved in 20 ml. H<sub>2</sub>O and 16 ml. 16% HCl was diazotized 15-20 min. with 2N NaNO<sub>2</sub> at not higher than 2-4.degree., cooled to 0.degree., and coupled 2-4 hrs. with solns. of tetrazo derivs. Filtering, pptg. from NaOH with HCl, and recrystg. from EtOH gave practically quant. yields of the corresponding dyes. The products obtained by different coupling substances are given as follows: PhOH, light brown, m. 225-7.degree., yellow in acid, orange in alkali, inactive (I) against tuberculosis **bacteria**; o-cresol brick, m. 129-32.degree., brown, brown, partially active (P); m-cresol, light-brown, m. 112-14.degree., yellow, apricot, P; p-cresol, brown, m. 140-3.degree., orange, apricot, P; 1,3,4-xilenol, red, m. 239-40.degree., cherry, red, (dyes wool, silk, and cotton red), P; 1,3,5-xilenol, brick, m. 135-9.degree., apricot, red, active (A) at 1:20,000; 1,4,5-xilenol, brown, m. 183-5.degree., orange, red, A at 1:20,000; 1,2,4-xilenol, brown, m. 248-50, brick red, brick red, A at 1:10,000; p-HOC<sub>6</sub>H<sub>4</sub>Ph, chocolate, m. 249-51.degree., pink, yellow, (dyes wool pink), A at 1:10,000; p-isoamylphenol, brown, m. 115-18.degree., lemon, yellow, I; **thymol**, brown, m. 135-8.degree., yellow, orange, I; **carvacrol**, orange, m. 169-72.degree., red, red, (dyes wool and silk red), A at 1:50,000; resorcinol, black, -, yellow, red, (dyes wool, rayon, and cotton yellow, silk orange), I; 5-methylresorcinol, red, m. 365.degree., brick-red, brick-red, (dyes wool and silk red), A at 1:33,000; hexylresorcinol, red,

decompd., dark-red, dark-red (dyes wool and silk brick, rayon and cotton red), A at 1:10,000; pyrocatechol, brown, m. 350.degree., brick-red, brick-red, (dyes wool, silk, rayon, and cotton brown), A at 1:5,000; pyrocatechol mono-Me ether, brown, m. 163.degree. (decompd.), yellow, red, (dyes wool and silk orange, rayon and cotton yellow), I; pyrocatechol mono-Et ether, brown, m. 201-4.degree., dark-red, dark-red, (dyes wool, silk, rayon, and cotton flesh-color), I; pyrogallol, light-brown, m. 365.degree., yellow, lemon, (not absorbed by textiles), I; 1,2,4-C<sub>6</sub>H<sub>3</sub>(OH)<sub>3</sub>, black, m. 222-4.degree., orange, red, (dyes wool, silk, rayon, and cotton brown-yellow), A at 1:3,000; phloroglucinol, black, m. >365.degree., brown, brown, (not absorbed by textiles), I; 1-naphthol, red, m. 245-7.degree., orange, pink, (absorbed by textiles slightly), I; 2-naphthol, red, m. 194-6.degree., red, red, (dyes wool pink, rayon orange, silk and cotton red), P; 8-hydroxyfluorenone, red, m. >365.degree., red, green, (dyes wool, silk, and rayon bright-red, cotton dull-red), A at 1:20,000; 1-phenyl-3-methyl-5-pyrazolone, orange, m. 271-3, orange, brick, (dyes wool brick, silk, rayon, and cotton canary shades), A at 1:20,000; 1-phenyl-2,3-dimethyl-5-pyrazolone, brick, m. >365.degree., yellow, light-brown, (dyes wool, silk, rayon, and cotton lemon-yellow), I; 8-quinolinol, black, m. 233-5.degree., red, red, (dyes wool and silk flesh colors, not absorbed by rayon and cotton), A at 1:10,000; 4-chlorophenol, brick, m. >365.degree., yellow, pink, (dyes wool, silk, rayon, and cotton yellow), P; 1,3,4,6-dichlororesorcinol, red, m. >365.degree., yellow, red, (dyes wool, silk, rayon, and cotton yellow-orange), P; 6-chlorothymol, orange, m. >365.degree., orange, red, (dyes wool cream, silk orange, rayon and cotton yellow), activity increased with diln.

L20 ANSWER 34 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1955:57282 HCAPLUS

DOCUMENT NUMBER: 49:57282

ORIGINAL REFERENCE NO.: 49:11091e-g

TITLE: Possibilities of the use of ethereal oils for room disinfection. II

AUTHOR(S): Kellner, W.; Kober, W.

CORPORATE SOURCE: Stadt. Hyg. Inst., Nurnberg, Germany

SOURCE: Arzneimittelforsch. (1955), 5, 224-9

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C.A. 48, 10128e. The **antibacterial** action of 175 ethereal oils has been tested against 9 species of **bacteria**; 21 of the most active oils were classified according to plant families and chem. compn. and it was found that oils from the same families contain the same or similar compds. The following compds. showed strong **antibacterial** activity: p-cymene, linalool, geraniol, nerol, **thymol**, **carvacrol**, eugenol, safrol, BzH, cumene aldehyde, cinnamic aldehyde, salicylic aldehyde, pulegone, carvone, thujone, ascaridol, and cineol. The terpenes in general show considerable **antibacterial** activity.

L20 ANSWER 35 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1953:5167 HCAPLUS

DOCUMENT NUMBER: 47:5167

ORIGINAL REFERENCE NO.: 47:867a-i

TITLE: Products of azo coupling of diazotized aminonitrodiphenyl sulfone with phenols and naphthols

AUTHOR(S): Zhedek, M. S.

SOURCE: Zhur. Priklad. Khim. (J. Applied Chem.) (1952), 25, 109-13

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB p-Amino-p'-nitrodiphenyl sulfide is acetylated with Ac<sub>2</sub>O-AcOH, then oxidized with Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>-H<sub>2</sub>SO<sub>4</sub> 12 hrs. at -2.degree. to give the N-Ac deriv.



of the corresponding sulfone, m. 219-20.degree.. This is hydrolyzed by refluxing for 15-20 hrs. with 16% HCl, filtered hot, and cooled, to yield the HCl salt of p-amino-p'-nitrodiphenyl sulfone, which with NaOH yields the free base, m. 168-70.degree. (from EtOH), m. 164-5.degree. (from AcOH), m. 168-9.degree. (from MeOH; the best solvent). This (2.8 g.) is triturated in 12 ml. 16% HCl, taken up in 50 ml. MeOH, the soln. cooled to 0.degree., treated with 5-5.2 ml. 2 N NaNO<sub>2</sub>, and the pptd. emulsified diazonium salt used in situ for coupling by addn. to an alk. soln. of the coupler in 5% excess; after 4-6 hrs. the product is filtered off and repptd. from NaOH by HCl. The products obtained with the various couplers are shown as follows: PhOH, brown, m. 228-30.degree., yellow in acids, orange in alkalis, dyes wool orange, silk yellow, inactive against tuberculosis **bacteria**; o-cresol, brown, m. 173-6.degree., yellow, red, orange, yellow, active at 1:20,000 concn.; m-cresol, brown, m. 168-70.degree., yellow, red, orange-yellow, yellow, active at 1:40,000; p-cresol, brown-yellow, m. 160-2.degree., orange-yellow, red, orange-red, yellow, active at 1:20,000; 1,3,4-xyleneol, brick red, m. 180-2.degree., yellow, reddish, orange-yellow, yellow, very active at 1:2,000; 1,3,5-xyleneol, brick-yellow, m. 186-9.degree., yellow, ruby, orange, orange, very active at 1:8,000; 1,4,5-xyleneol, bright red m. 160-3.degree., yellow, orange, orange, very active at 1:3,000; 1,2,4-xyleneol, red, m. 216-18.degree., yellow, purple, yellow, apricot, very active at 1:2,500; p-HOC<sub>6</sub>H<sub>4</sub>-Ph, orange, m. 152-4.degree., yellow, red-pink, orange, yellow, very active at 1:8,000, p-isoamylphenol, brown, m. 163-5.degree., yellow, red, yellow, yellow, active at 1:4,000; **thymol**, brown, m. 180-3.degree., red, red, yellow, yellow, inactive; **carvacrol**, orange, m. 190-2.degree., lemon-yellow, red, yellow, yellow, active at 1:4,000; anisole, brown, does not m. 365.degree., yellow, brick-red, not absorbed by fabrics, very active at 1:40,000; resorcinol, brown, m. 223-5.degree., yellow, red, yellow, yellow, active at 1:10,000; 5-methylresorcinol, orange, m. 130-3.degree., yellow, yellow, yellow, yellow, very active at 1:5,000; 4-hexylresorcinol, brown, m. 189-91.degree., yellow, yellow, brown, brown, very active at 1:20,000; pyrocatechol, brown, m. 152-5.degree., yellow, brown, yellow, yellow, very active at 1:6,000; guaiacol, chocolate, m. 210-12.degree., yellow, red, yellow, yellow, inactive at 1:5,000; pyrocatechol mono-Et ether, brown, m. 138-40.degree., yellow, red, brick red, brick red, very active at 1:2,000; pyrogallol, red-brown, m. over 265.degree., yellow, brick-red, not absorbed by textiles, very active at 1:3,000; 1,2,4-C<sub>6</sub>H<sub>3</sub>(OH)<sub>3</sub>, brown, m. 225-7.degree., brown, brown, not absorbed by textiles, very active at 1:20,000; phloroglucinol, red, m. above 365.degree., red, red, yellow, yellow, very active at 1:2,000; 1-C<sub>10</sub>H<sub>7</sub>OH, red-brown, m. 206-8.degree., yellow, red, brown, pink, inactive; 2-C<sub>10</sub>H<sub>7</sub>OH, orange-red, m. 178-81.degree., orange, red, flesh color, flesh color, very active at 1:20,000; anthrarufin, yellow, does not m. 365.degree., orange, red, orange, orange, active at 1:5,000; alizarin, brown, m. 195-8.degree., red, red, yellow, none, inactive; 8-hydroxy-9-fluorenone, red, m. 270-3.degree., pink, green, reddish, pink, inactive; 1-phenyl-3-methyl-5-pyrazolone, orange, m. 240-1.degree., yellow, red, pink, pink, inactive; 1-phenyl-2,3-dimethyl-5-pyrazolone, yellow, m. 222-4.degree., brown, brown, yellow, yellow, very active at 1:4,000; 8-quinolinol, brown, not m. 365.degree., red, red, yellow, yellow, very active at 1:4,000; p-chlorophenol, orange, m. 205-7.degree., orange, red, red, yellow, inactive; dichlororesorcinol, brick-red, m. 270-2.degree., orange, red, red, yellow, very active at 1:2,000; 6-chlorothymol, red, does not melt, orange, red, yellow, yellow, very active at 1:2,000. The products were inactive against gas gangrene, typhoid, and paratyphoid organisms.

L20 ANSWER 36 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1950:57608 HCAPLUS  
 DOCUMENT NUMBER: 44:57608  
 ORIGINAL REFERENCE NO.: 44:10928g-i

TITLE: Chemotherapy by balsamics  
 AUTHOR(S): Caujolle, Fernand  
 CORPORATE SOURCE: Faculte pharm., Toulouse, Fr.  
 SOURCE: Toulouse med. (1947), 48, 51-66  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB The compn. of thyme oils is described. Ethers of their principal constituents were prepd. and studied. Min. lethal dose of **thymol** and of its Me, Et, Pr, iso-Pr, Bu, iso-Bu, iso-Am, and benzyl ethers in dogs was found, resp., 0.15, 1.85, 1.13, 1.92, 0.55, 1.65, 1.27, 0.30, and 1.80 g./kg. wt. The same values for **carvacrol** and its Me, Et, and Pr ethers were 0.32, 0.96, 0.71, and 0.93 g./kg. All these ethers lowered the arterial pressure. Etherification diminished the toxicity of the phenolics. Antiseptic power of these derivs. against several **bacteria** was detd. In poisoned dogs 7 to 39, av. 26.3%, of the perfused ethers was fixed in the lungs, 2.7% in the liver and 0.7% in the kidneys.

L20 ANSWER 37 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1947:8323 HCAPLUS  
 DOCUMENT NUMBER: 41:8323  
 ORIGINAL REFERENCE NO.: 41:1753g-i  
 TITLE: The pharmacodynamic study of carvacrol and its ethers  
 AUTHOR(S): Andrieu, George; Caujolle, Fernand; Franck, Claude; Girard, Louis  
 SOURCE: Compt. rend. (1946), 223, 755-6  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB cf. C.A. 39, 2566.3; 40, 1228.1, 31831. Toxicity of the Me (I), Et (II) and Pr (III) ethers of **carvacrol** (IV) was studied. The ethers were prepd. by condensation in alc. medium, using Me and Et sulfates and Pr bromide, resp., with Na **carvacrolate**. In each case the product was suspended in H<sub>2</sub>O, shaken out in petroleum ether, freed from solvent at atm. pressure, and distd. at reduced pressure. By the method of Caujolle and Franck on dogs, I and III were 1/3 as toxic as IV, and II was less than 1/2 as toxic. Respiratory irregularities and fall of blood pressure were observed. There were no convulsions. In **bactericidal** power, I, II, and III were inferior to IV, resembling the ethers of **thymol**.

L20 ANSWER 38 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1944:39017 HCAPLUS  
 DOCUMENT NUMBER: 38:39017  
 ORIGINAL REFERENCE NO.: 38:5804h-i, 5805a-e  
 TITLE: Preparation and **bactericidal** effect of phenyl phosphates  
 AUTHOR(S): Rosenmund, K. W.; Vogt, Hans  
 SOURCE: Arch. Pharm. (1943), 281, 317-27  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB It can be assumed that earlier attempts to find new disinfectants have been unsuccessful because it was not taken into account that a disinfectant must not only be water-sol. but also lipoid-sol. New phosphoric acid esters of phenol derivs. and their K salts were prepd. and examd. with respect to this soly. and to their suitability as disinfectants. Only mono- and di-Ph esters were prepd. because tri-Ph esters are difficultly sol. and poisonous. p-ClC<sub>6</sub>H<sub>4</sub>OH was refluxed with an excess of POCl<sub>3</sub> (0.2 mol. ClC<sub>6</sub>H<sub>4</sub>OH to 0.125 mol. POCl<sub>3</sub>) in the presence of Mg cuttings at 130-40.degree. until the HCl evolution stopped. After distn. of the excess POCl<sub>3</sub> the product was fractionally distd. in a high vacuum. Compds. of the type (RO)POCl<sub>2</sub> (I) and (RO)<sub>2</sub>POCl (II) were prepd. I, R=p-ClC<sub>6</sub>H<sub>4</sub>, b0.1 95-115.degree.; II, R=p-ClC<sub>6</sub>H<sub>4</sub>, b0.1 164-76.degree.; I, R=4-Cl-3-MeC<sub>6</sub>H<sub>3</sub>, b0.1, 95.degree.; II, R=4-Cl-3-MeC<sub>6</sub>H<sub>3</sub>, b0.1

170.degree.; I, R=4-Bu-2-MeC6H3, b0.4 128-33.degree.; II, R=4-Bu-2-MeC6H3, b0.4 219-23.degree.; I, R=4-iso-Am-2-MeC6H3, b0.1 125-33.degree.; II, R=4-iso-Am-2-MeC6H3, b0.2 215-22.degree.; I, R=4-hexyl-.omicron.-tolyl, b0.15 140-45.degree.; II, R=4-hexyl-.omicron.-tolyl, b0.1 245-52.degree.; I, R=6-chlorothymyl, b12, 168.degree.; II, R=6-chlorothymyl, b0.2 185-95.degree.; I, R=5-**chlorocarvacryl**, b0.6 123-5.degree.; II, R=5-**chlorocarvacryl**, b0.6 190-2.degree.; I, R=6-butylthymyl, b0.2 138-41.degree.; II, R=6-butylthymyl, b0.2 218-30.degree.; I, R=6-butyryl-.omicron.-tolyl, b0.2 167.degree.. Other compds. prepd. were mono(p-chlorophenyl) phosphate, m. 93.degree. (and K salt); K bis(p-chlorophenyl) phosphate; mono(p-chloro-m-tolyl) phosphate, m. 131.degree.; bis(p-chloro-m-tolyl) phosphate, m. 116.degree. (and K salt); mono(p-butyl-.omicron.-tolyl) phosphate, m. 83.degree.; K bis(4-butyl-.omicron.-tolyl) phosphate; K bis(4-isoamyl-.omicron.-tolyl) phosphate; K bis(p-hexyl-.omicron.-tolyl) phosphate; mono(6-chlorothymyl) phosphate, m. 142.degree.; bis(6-chlorothymyl) phosphate, m. 134.degree. (and K salt); mono(5-**chlorocarvacryl**) phosphate, m. 148.degree.; bis(5-**chlorocarvacryl**) phosphate (and Na salt); K bis(6-butylthymyl) phosphate; mono(4-butyryl-.omicron.-tolyl) phosphate, m. 139.degree.; K bis(4-butyryl-.omicron.-tolyl) phosphate; and K bis(6-butyrylthymyl) phosphate. No more oxo phenyl phosphates were prepd. after the **bacteriological** tests had shown that these last 2 esters are ineffective, in accordance with their small lipide soly. The salts of the other mono-Ph esters are also ineffective. Among the salts of di-Ph esters, the esters of 4-isoamyl-.omicron.-cresol, 6-chlorothymol, and 5-**chlorocarvacrol** had a substantial effect; the esters of 4-butyl-.omicron.-cresol and 6-butyl-**thymol** had a smaller effect on staphylococci. There was no effect on **bacteria coli**.

L20 ANSWER 39 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1942:23630 HCAPLUS  
DOCUMENT NUMBER: 36:23630  
ORIGINAL REFERENCE NO.: 36:3625e-f  
TITLE: Theory and practice of **bactericidal** action of various kinds of disinfectants  
AUTHOR(S): Kozima, K.  
SOURCE: Japan. J. Exptl. Med. (1940), 18, 439-41  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The **bactericidal** power of **thymol** and **carvacrol** is increased by halogenation, especially by monohalogenation; chlorothymol, iodothymol, and **chlorocarvacrol** have greatly increased **bactericidal** power. These halogen derivs. act selectively on the Gram-positive **bacteria**.

L20 ANSWER 40 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1940:49338 HCAPLUS  
DOCUMENT NUMBER: 34:49338  
ORIGINAL REFERENCE NO.: 34:7539c-e  
TITLE: Phenolic ointments  
AUTHOR(S): Burnside, Carl B.; Kuever, Rudolph A.  
SOURCE: J. Am. Pharm. Assoc. (1940), 29, 373-9  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB It has been confirmed once more that PhOH ointment, U. S. P., is nonantiseptic when tested by the official U. S. Food & Drug Administration method using Staphylococcus aureus. Ointments of hexylresorcinol, **chlorocarvacrol**, m-hydroxybiphenyl, chlorothymol, **thymol**, 3-chloro-4-hydroxybiphenyl, o-hydroxybiphenyl and .beta.-naphthol show varying antiseptic potency in the U. S. P. PhOH-ointment base. Like PhOH, p-hydroxybiphenyl, resorcinol and trinitrophenol show no antiseptic potency in the U. S. P. PhOH-ointment base. The above 12 phenols and derivs. all show substantial antiseptic potency in the following proposed

emulsion ointment base: gardinol (a mixt. of neutralized, sulfated, higher alcs.) 0.25, propylene glycol 6.00, H<sub>2</sub>O 1.92 and white petrolatum 91.83 g. Waxes in ointment bases are deleterious by reducing the **bactericidal** potency of the ointment. PhOH ointment U. S. P. XI is devoid of antiseptic potency, while the ointment of the same strength prepd. with the proposed base produces a clear zone of inhibition 6 mm. wide.

L20 ANSWER 41 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1937:64157 HCAPLUS  
 DOCUMENT NUMBER: 31:64157  
 ORIGINAL REFERENCE NO.: 31:8838a-b  
 TITLE: Disinfectant compositions  
 INVENTOR(S): Gelinsky, Ernest  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 649126		19370816	DE	

AB A phenolic disinfectant, e. g., **thymol** or **carvacrol** or a halogen deriv. thereof, is dissolved in a water-insol, solvent, and the soln. is gelatinized by addn. of a soap. A **bactericidal** dye, e. g., an acridine dye, may also be added. Sp. compns. are described. In use, the gelatinous compns. are compressed, whereby the disinfectant soln. is exuded.

L20 ANSWER 42 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1936:31713 HCAPLUS  
 DOCUMENT NUMBER: 30:31713  
 ORIGINAL REFERENCE NO.: 30:4177a-c  
 TITLE: Phenolic morpholines  
 INVENTOR(S): Bruson, Herman A.  
 PATENT ASSIGNEE(S): Rohm & Haas Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2040039		19360505	US	

AB At least one mol. equiv. each of morpholine and CH<sub>2</sub>O is condensed (suitably in water, alc. or dioxane) with a phenol such as phenol (I) itself, o-, m- and p-cresol, 1,3,5-xyleneol, .alpha.- or .beta.-naphthol (II), o-, m- or p-phenylphenol (III), benzylphenol, cyclchexylphenol, benzoylphenol, nitrophenol, chlorophenol, 2- (IV) or 4-chloro-o-phenylphenol (V), .alpha., .alpha., .gamma., .gamma.-tetramethylbutylphenol, .alpha., .alpha., .gamma., .gamma.-tetramethylbutylresorcinol (VI), **thymol**, **carvacrol**, p-tert-butyl- or amyl-phenol, bis(p-hydroxyphenyl)dimethylmethane, saligenin, guaiacol, resorcinol (VII), pyrocatechol, hydroquinone, 8-hydroxyquinoline, p-acetamidophenol and pyrogallol. I forms a condensation product m. about 95-6.degree., III a product m. 88-9.degree., II a product m. about 115-16.degree., IV a product m. 155-6.degree., V a product m. 125-6.degree., VII a product m. 207.degree., and VI a product m. 145-6.degree.. The products may be used in soaps, wetting and emulsifying agents, **bactericidal** and insecticidal compns.

L20 ANSWER 43 OF 44 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1935:39864 HCAPLUS

DOCUMENT NUMBER: 29:39864  
 ORIGINAL REFERENCE NO.: 29:5187i,5188a  
 TITLE: Biological properties of carvacrol  
 AUTHOR(S): Gardner, Daniel; Caselli, Maria-Luciana  
 SOURCE: Compt. rend. (1935), 200, 1430-2  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB In comparable tests on poppy-seed oil solns., with Staph. aureus **carvacrol** produced sterility in 6 min., **thymol** in 30-60 min. and menthol in 9-10 hours. **Carvacrol** soln. in triethanolamine is less germicidal. **Carvacrol** was **bactericidal** in tests on B. paratuberculosis Kedrewski from a case of leprosy and on Esch. coli. Injection of oil soln. produced no detectible injury to the guinea pig, but alc. soln. produced local disturbances. Intraperitoneally injected, **carvacrol** in oil killed guinea pigs, whereas **thymol** in oil did not.

L20 ANSWER 44 OF 44 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1918:5742 HCAPLUS  
 DOCUMENT NUMBER: 12:5742  
 ORIGINAL REFERENCE NO.: 12:950h-i,951a-b  
 TITLE: Survey of certain chemicals with regard to their **bactericidal** action on cholera vibrios within the bodies of experimental cholera carriers.  
 AUTHOR(S): Schobl, Otto  
 SOURCE: Philippine J. Sci. (1917), 12B, 215-31  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB The exptl. cholera carriers were guinea pigs, into whose gall bladders cholera vibrios were introduced by intravesicular injection. The chemicals were administered by mouth or by intramuscular injection. The following compds. were used: benzene, toluene, xylene, CHCl<sub>3</sub>, CHBr<sub>2</sub>, CCl<sub>3</sub>CHO, C<sub>6</sub>H<sub>5</sub>COOH, resorcinol, pyrocatechol, guaiacol, gallic acid, pyrogallol, **carvacrol**, **thymol**, creosote, xyleneol, .alpha.- and .beta.-naphthol, betol, inorganic and organic salicylates. salipyrine, urotropine. camphor, eucalyptol. anethole, phenetole, terpeneol, turpentine, oils of clove, cinnamon and copaiba, quinine, emetine, salvarsan, atoxyl, Na cacodylate, As<sub>2</sub>O<sub>3</sub>, Sb<sub>2</sub>O<sub>3</sub>, MgO<sub>3</sub>. KI, KMnO<sub>4</sub>, HgCl, Sb tartrate, methylene blue, gentian violet, brilliant green, fuchsin, trypan red and blue. scarlet-red, chrysoidin, vesuvin, victoria blue, crystal violet. None of the drugs tested showed such prompt effect as to bring about complete sterilization of the animal's body in a short time in every case. Nevertheless there are certain indications evident of the possibility of shortening the duration of the state of cholera carrier. Indications of curative effect were obtained with pyrocatechol, guaiacol, pyrogallol, **carvacrol**, Sb<sub>2</sub>O<sub>2</sub>, As<sub>2</sub>O<sub>3</sub> (small doses injected intramuscularly), and the organic compds. of As.

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 DICTIONARY FILE UPDATES: 4 SEP 2002 HIGHEST RN 446821-48-3

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Calculated physical property data is now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s el-e3

1 89-83-8/BI  
     (89-83-8/RN)  
 1 499-75-2/BI  
     (499-75-2/RN)  
 1 6074-31-3/BI  
     (6074-31-3/RN)

L21 3 (89-83-8/BI OR 499-75-2/BI OR 6074-31-3/BI)

=> d ide can l21 1-3

L21 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2002 ACS

RN **6074-31-3** REGISTRY

CN Thiocyanic acid, 4-hydroxy-2-methyl-5-(1-methylethyl)phenyl ester (9CI)  
     (CA INDEX NAME)

OTHER CA INDEX NAMES:

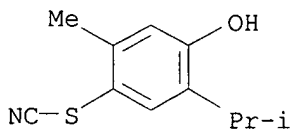
CN Thiocyanic acid, 5-hydroxycarvacryl ester (6CI, 7CI, 8CI)

CN Thymol, 6-thiocyanato- (8CI)

FS 3D CONCORD

MF C11 H13 N O S

LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, RTECS\*  
     (\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1967 TO DATE)  
 5 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
 4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 129:260399

REFERENCE 2: 117:207194

REFERENCE 3: 104:206892

REFERENCE 4: 85:177060

REFERENCE 5: 73:128140

L21 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2002 ACS

RN **499-75-2** REGISTRY

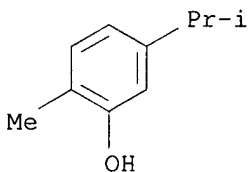
CN Phenol, 2-methyl-5-(1-methylethyl)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Carvacrol (8CI)

## OTHER NAMES:

CN 2-Hydroxy-1-methyl-4-(1-methylethyl)benzene  
 CN 2-Hydroxy-p-cymene  
 CN 2-Methyl-5-(1-methylethyl)phenol  
 CN 2-Methyl-5-isopropylphenol  
 CN 5-Isopropyl-2-methylphenol  
 CN 5-Isopropyl-o-cresol  
 CN 6-Methyl-3-isopropylphenol  
 CN Antioxine  
 CN p-Cymen-2-ol  
 FS 3D CONCORD  
 MF C10 H14 O  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS,  
 CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM\*, DIOGENES, DRUGU,  
 EMBASE, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE,  
 MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC, PROMT, RTECS\*, SPECINFO,  
 TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)

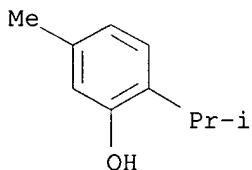


## \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1988 REFERENCES IN FILE CA (1967 TO DATE)  
 17 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 1995 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
 20 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145165  
 REFERENCE 2: 137:145164  
 REFERENCE 3: 137:145163  
 REFERENCE 4: 137:139543  
 REFERENCE 5: 137:137623  
 REFERENCE 6: 137:137531  
 REFERENCE 7: 137:122247  
 REFERENCE 8: 137:121085  
 REFERENCE 9: 137:121078  
 REFERENCE 10: 137:114192

RN 89-83-8 REGISTRY  
 CN Phenol, 5-methyl-2-(1-methylethyl)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Thymol (8CI)  
 OTHER NAMES:  
 CN 1-Methyl-3-hydroxy-4-isopropylbenzene  
 CN 2-Hydroxy-1-isopropyl-4-methylbenzene  
 CN 2-Isopropyl-5-methylphenol  
 CN 3-Hydroxy-p-cymene  
 CN 3-Methyl-6-isopropylphenol  
 CN 5-Methyl-2-(1-methylethyl)phenol  
 CN 5-Methyl-2-isopropyl-1-phenol  
 CN 5-Methyl-2-isopropylphenol  
 CN 6-Isopropyl-3-methylphenol  
 CN 6-Isopropyl-m-cresol  
 CN m-Thymol  
 CN p-Cymen-3-ol  
 CN Thyme camphor  
 CN Thymol Chrystals  
 FS 3D CONCORD  
 MF C10 H14 O  
 CI COM  
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM\*, DIOGENES, DRUGU, EMBASE, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER, ULIDAT, USAN, USPAT2, USPATFULL, VETU  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3844 REFERENCES IN FILE CA (1967 TO DATE)  
 56 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 3853 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
 7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145165  
 REFERENCE 2: 137:145164  
 REFERENCE 3: 137:145163  
 REFERENCE 4: 137:140309  
 REFERENCE 5: 137:140239  
 REFERENCE 6: 137:139691  
 REFERENCE 7: 137:139543



REFERENCE 8: 137:137623

REFERENCE 9: 137:137531

REFERENCE 10: 137:129955